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WHAT IS CLAIMED IS:

1. A continuous mode electronic ballast for operating an HID lamp comprising:

an inverter circuit configured to generate a control signal;

a resonant circuit, configured for operational coupling to the inverter circuit and to the lamp to generate resonant voltage in response to receiving the control signal;

a clamping circuit, operationally coupled to the resonant circuit to limit the voltage across the resonant circuit to protect components of the ballast; and

a multiplier circuit, operationally coupled to the resonant circuit to boost the voltage clamped by the clamping circuit to a value sufficient to permit starting of the lamp, wherein

the clamping circuit and the multiplier circuit cooperate to facilitate a continuous starting of the lamp.

2. The ballast according to claim 1, wherein the multiplier precludes forward biasing of diodes to accomplish a lower power dissipation.

3. The ballast according to claim 1, wherein the multiplier precludes forward biasing of diodes realizing a DC bias of +/-.25V or less.

4. The ballast according to claim 1, further including:

a blocking capacitor, operationally connected in series with the lamp and between a terminal and a terminal.

5. The ballast according to claim 4, wherein the multiplier is operationally connected to the terminals to multiply an output voltage of the inverter at the terminal and store negative charge into the blocking capacitor through the terminal.

6 The ballast according to claim 1, wherein the resonant circuit includes a resonant capacitor, operationally connected to a node, and the clamping circuit includes:

a pair of serially operationally connected diodes connected to a voltage bus and a common bus;

a first capacitor, operationally connected between the voltage bus and the common node; and

a second capacitor), operationally connected between the node and the common bus and in parallel to the first capacitor, the first and the second capacitors are in series with the resonant capacitor, wherein

each diode is operationally connected across an associated capacitor to maintain an output voltage at an output terminal as determined by switching frequency and values of capacitors.

7 The ballast according to claim 1, further including:

a pulsing circuit to turn the inverter "ON" and "OFF," the pulsing circuit including:

a control circuit which controls a supply of power to the inverter; and

a charge pump circuit which controls an operation of the control circuit.

8. The ballast according to claim 7, wherein the charge pump circuit and the control circuit cooperate to generate a duty cycle, at which the inverter is turned "ON" for a predetermined time to generate a voltage sufficient to start the lamp and "OFF" to reduce an RMS of the inverter to 600V or less.

9. The ballast according to claim 8, wherein the reduced RMS is generated by turning the inverter "ON" for 50msec or less and "OFF" for the rest of a cycle.

10. The ballast according to claim 8, wherein the reduced RMS of the inverter facilitates a use of conventional power cables rated at 600V.

11. The ballast according to claim 7, wherein the pulsing circuit facilitates a reduced power dissipation prior to lighting of the lamp, which power dissipation is 2/3W or less.

12. A continuous mode electronic ballast for operating an HID lamp comprising:

a resonant circuit incorporating lamp connections and including a resonant inductance and a resonant capacitance;

an inverter circuit, operationally coupled to the resonant circuit for inducing an AC current in the resonant circuit, the inverter circuit including:

first and second switches serially connected between a bus conductor at a DC voltage and a reference conductor, and being connected together at a common node, through which the AC load current flows, and

a gate drive circuitry for controlling the corresponding first and second switches;

a clamping circuit, operationally coupled to the resonant circuit and configured to limit a voltage generated by the resonant circuit to a value which is substantially safe for components of the ballast;

a multiplier circuit, operationally connected across terminals to boost an output voltage of the inverter to a value sufficient to ignite the lamp; and

a pulsing circuit which includes:

a pump charge circuit, and

a control circuit, the pump charge circuit and the control circuit cooperate to supply power to the inverter for a predetermined time each cycle.

13. The ballast according to claim 12, wherein the clamping circuit includes a pair of serially connected diodes, each diode connected across an associated capacitor.

14. The ballast according to claim 12, wherein the multiplier circuit includes:

capacitors, and

diodes, wherein

the capacitors and diodes cooperate to preclude forward biasing of diodes to lower a power dissipation of the ballast.

15. The ballast according to claim 14, wherein the resonant circuit further includes a blocking capacitor, connected to the terminals and the multiplier cooperates with the inverter to accumulate charge in the capacitors for a first half of a cycle and dump the accumulated charge into the blocking capacitor for a second half of the cycle.

16. The ballast according to claim 16, wherein the pulsing circuit facilitates the continuous operation of the ballast by achieving a zero switching frequency of the inverter.